

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2000-292768**

(43)Date of publication of application : **20.10.2000**

(51)Int.Cl. **G02F 1/133**
G09G 3/20
G09G 3/36

(21)Application number : **11-096484**

(71)Applicant : **OPTREX CORP**
ASAHI GLASS CO
LTD

(22)Date of filing :

02.04.1999

(72)Inventor : **NAGAI MAKOTO**
NAKAZAWA
SATOSHI
TAMAI KIYOSHI
KITAMURA
MASAKAZU

(54) DRIVING METHOD FOR LIQUID CRYSTAL DISPLAY DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To prevent a liquid crystal panel from flickering even when driven at low frequency by a MLA method by making rows of row elements of an orthogonal matrix which are inverted and rows which are not inverted

correspond to adjacent row electrodes.

SOLUTION: This is a driving method of driving a simple matrix liquid crystal display element by a multi-line

simultaneous selecting method using an

orthogonal matrix and the matrix of (n)

rows by (m) columns is denoted as A. The

row elements of n/2 (n: even number)

rows of row elements of the orthogonal matrix A are inverted in polarity

to obtain an orthogonal matrix A1 and the row elements of other (n)/2

rows are inverted in polarity to obtain an orthogonal matrix A2. After A1

$$\begin{array}{ccc}
 (A) & & \begin{array}{c} (A_1) \\ (0, \text{行反転}) \end{array} & & \begin{array}{c} (A_2) \\ (1, \text{行反転}) \end{array} \\
 \begin{array}{cccc} -1 & 1 & 1 & 1 \\ 1 & 1 & -1 & 1 \\ 1 & -1 & 1 & 1 \\ 1 & 1 & 1 & -1 \end{array} & \Rightarrow & \begin{array}{cccc} -1 & 1 & 1 & 1 \\ -1 & -1 & 1 & -1 \\ 1 & -1 & 1 & 1 \\ -1 & 1 & -1 & 1 \end{array} & + & \begin{array}{cccc} 1 & -1 & -1 & -1 \\ 1 & 1 & -1 & 1 \\ -1 & 1 & -1 & -1 \\ 1 & 1 & 1 & -1 \end{array} \\
 \text{奇数フレーム} & & & & & \text{偶数フレーム}
 \end{array}$$

is used as an orthogonal matrix to simultaneously selectively drive multiple lines, the orthogonal matrix A2 is used to simultaneously selectively drive multi lines, the inverted rows and uninverted rows of row elements of the orthogonal matrixes A1 and A2 are made to correspond to adjacent row electrodes. Consequently, luminance displacement is canceled between adjacent row electrodes to prevent flickering even when the driving frequency is lowered.

LEGAL STATUS

[Date of request for examination] 30.06.2004

[Date of sending the examiner's
decision of rejection]

[Kind of final disposal of application
other than the examiner's decision
of rejection or application
converted registration]

[Date of final disposal for
application]

[Patent number]

[Date of registration]

[Number of appeal against
examiner's decision of rejection]

[Date of requesting appeal against
examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開2000-292768

(P2000-292768A)

(43) 公開日 平成12年10月20日 (2000. 10. 20)

(51) Int.Cl.	識別記号	F I	テラット (参考)
G 0 2 F 1/133	5 4 5	G 0 2 F 1/133	5 4 5 2 H 0 9 3
G 0 9 G 3/20	6 1 1	G 0 9 G 3/20	6 1 1 E 5 C 0 0 6
	6 2 1		6 1 1 A 5 C 0 8 0
	6 2 2		6 2 1 B
			6 2 2 Q

審査請求 未請求 請求項の数 6 O L (全 11 頁) 最終頁に続く

(21) 出願番号 特願平11-96484

(22) 出願日 平成11年4月2日 (1999. 4. 2)

(71) 出願人 000103747

オプトレックス株式会社

東京都荒川区東日暮里五丁目7番18号

(71) 出願人 000000044

旭硝子株式会社

東京都千代田区有楽町一丁目12番1号

(72) 発明者 永井 真

神奈川県横浜市中区羽沢町1150番地

旭硝子株式会社内

(74) 代理人 100103090

弁護士 岩壁 冬樹

最終頁に続く

(54) 【発明の名称】 液晶表示装置の駆動方法

(57) 【要約】 (修正有)

【課題】 M L A 法で液晶表示装置を低周波駆動して液晶パネルのちらつきを防止し、低消費電力化を達成する。

【解決手段】 M L A 駆動において、直交行列「A」の第1行と第3行の行列要素の極性を反転させた直交行列「A₁」と、直交行列「A」の第2行と第4行の行列要素の極性を反転させた直交行列「A₂」とを使用して複数ライン同時選択駆動を行う。

$$\begin{array}{ccc}
 \text{「A」} & & \begin{array}{c} \text{「A}_1\text{」} \\ \text{(2, 4行反転)} \end{array} & & \begin{array}{c} \text{「A}_2\text{」} \\ \text{(1, 3行反転)} \end{array} \\
 \begin{array}{cccc} -1 & 1 & 1 & 1 \\ 1 & 1 & -1 & 1 \\ 1 & -1 & 1 & 1 \\ 1 & 1 & 1 & -1 \end{array} & \Rightarrow & \begin{array}{cccc} -1 & 1 & 1 & 1 \\ -1 & -1 & -1 & -1 \\ 1 & -1 & 1 & 1 \\ -1 & -1 & -1 & 1 \end{array} & + & \begin{array}{cccc} 1 & -1 & -1 & -1 \\ 1 & 1 & -1 & 1 \\ -1 & 1 & -1 & -1 \\ 1 & 1 & 1 & -1 \end{array} \\
 & & \text{奇数フレーム} & & \text{偶数フレーム}
 \end{array}$$